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(54) **OPTICAL POSITION-MEASURING DEVICE**

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See application file for complete search history.

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(57) **ABSTRACT**

An optical position-measuring device senses a relative position of two objects. A reflection material measure is connected to one object and a scanning unit is connected to the other object. A beam is split into three sub-beams in a first splitting plane by a first splitting element. The first and third sub-beams are deflected toward the reflection material measure by the deflecting elements, while the second sub-beam is split into fourth and fifth sub-beams by a second splitting element. The first and fourth sub-beams propagate as a first pair of superimposed sub-beams and the third and fifth sub-beams propagate as a second pair of superimposed sub-beams. The first and second pairs of superimposed sub-beams, after being reflected by the reflection material measure, propagate respectively toward detectors, where the sub-beams in each pair are brought into interfering superposition, so that the detectors detect displacement-dependent scanning signals.

16 Claims, 5 Drawing Sheets